



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,911	06/12/2002	Kenneth Guild	604-630	2285

7590 02/27/2006

Nixon & Vanderhye  
1100 North Glebe Road 8th Floor  
Arlington, VA 22201-4714

EXAMINER
----------

CURS, NATHAN M

ART UNIT	PAPER NUMBER
----------	--------------

2633

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/088,911		GUILD ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Nathan Curs		2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 June 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 10-20 and 22-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-20 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Objections*

1. Claim 23 is objected to because of the following informalities: it depends from canceled claim 21. Appropriate correction is required. The claim has been considered as depending from claim 22.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 4-6 and 17-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 4 and 17, the specification does not disclose adding control information to the optical data signal using FSK.

Regarding claim 5, the specification does not disclose applying the constant amplitude modulation to the optical beam before the data modulation.

Regarding claim 6, the specification does not disclose applying amplitude modulation directly to the optical source.

Regarding claims 18 and 20, the specification does not disclose that the optical data signal comprises time-division multiplexed data packets each of which has associated therewith individual control information.

Art Unit: 2633

Regarding claim 19, the specification does not disclose that the optical data signal is carried by wavelength division multiplexed optical channels each of which has associated therewith individual control information.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 24 is rejected under 35 U.S.C. 102(e) as being anticipated by Fee et al. ("Fee") (US Patent No. 5956165).

Regarding claim 24, Fee discloses apparatus for modifying control information carried by an optical data signal transmitted through an optical network, the apparatus comprising a reader and decoder for reading and decoding the control information, a router for routing of the stream of data in dependence upon the decoded information and a wavelength converter comprising a semiconductor optical amplifier (col. 7, lines 6-14 and col. 9, line 35 to col. 11, line 51).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

Art Unit: 2633

said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3, 10-16, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fee (US Patent No. 5956165) in view of Kazovsky et al. ("Kazovsky") (Kazovsky et al.; "Starnet: a Multi-Gigabit-Per-Second Optical LAN Utilizing A Passive WDM Star", Journal of Lightwave Technology, IEEE, vol. 11, no 5/06, May 1993, pages 1009-1027).

Regarding claims 1-3, Fee discloses a method of encoding control information on an optical data signal to be transmitted through an optical network, comprising operating an optical source to generate a substantially coherent continuous-wave light beam, amplitude-modulating the light beam with a data stream to produce an optical data signal, and also modulating the data signal with control information (col. 4, lines 24-52, col. 7, line 51 to col. 8, line 4 and col. 11, lines 33-38). Fee discloses alternatively using coherent techniques known in the art to create and intensity modulated optical data signal that is modulated with a data signal and a superimposed, low-level subcarrier signal (col. 11, lines 33-38), but does not disclose that the control information is added to the optical data signal by means of a polarization modulation technique, a phase-shift-keying modulation technique, or a frequency-shift-keying modulation technique. Kazovsky discloses that amplitude modulation can be combined on the same carrier with any modulation that does not rely on transmission power variations, including PSK and POLSK (page 1014 col. 2, section B, 1<sup>st</sup> paragraph). It would have been obvious to one of ordinary skill in the art at the time of the invention that the subcarrier of Fee could be combined with the amplitude modulated data signal using any constant amplitude modulation technique, as taught by Kazovsky.

Regarding claim 10, Fee discloses an optical data signal transmitter adapted to encode control information on an optical data signal to be transmitted through an optical

Art Unit: 2633

network, which transmitter comprises an optical source arranged to generate a substantially coherent continuous-wave light beam, an amplitude-modulator which modulates said light beam with a data stream and control information, to produce an optical data signal (col. 4, lines 24-52, col. 7, line 51 to col. 8, line 4 and col. 11, lines 33-38). Fee discloses alternatively using coherent techniques known in the art to create and intensity modulated optical data signal that is modulated with a data signal and a superimposed, low-level subcarrier signal (col. 11, lines 33-38), but does not a substantially constant amplitude modulator arranged to modulate the data signal with control information, using a non-amplitude modulation technique. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Kazovsky with Fee as described above for claims 1-3.

Regarding claim 11, the combination of Fee and Kazovsky discloses an optical data signal transmitter as claimed in claim 10, wherein the optical source comprises a laser source (Fee: col. 7, line 51 to col. 8, line 4).

Regarding claim 12, Fee discloses a method of modifying control information carried by an optical data signal transmitted through an optical network, comprising the steps of encoding the control information on the optical signal so as to be associated with a stream of data (col. 7, line 51 to col. 8, line 4), transmitting the optical signal to a traffic processor, reading and decoding the control information and then deciding upon the routing of the stream of data depending upon the decoded information, and passing the optical data signal through a wavelength converter based on semiconductor optical amplifier thereby simultaneously removing the control information (col. 7, lines 6-14 and col. 9, line 35 to col. 11, line 51). Fee does not disclose that the control information is encoded on the optical signal using a non-amplitude varying format. However, it would

Art Unit: 2633

have been obvious to one of ordinary skill in the art at the time of the invention to combine Kazovsky with Fee as described above for claims 1-3.

Regarding claim 13, the combination of Fee and Kazovsky discloses a method as claimed in claim 12, wherein further control information encoded on the optical signal following wavelength conversion thereof, so as to be associated with the wavelength-converted data signal (Fee: col. 9, line 35 to col. 11, line 51).

Regarding claims 14 and 15, the combination of Fee and Kazovsky discloses a method as claimed in claim 13, wherein the further control information is encoded on the optical signal by a polarization modulation technique (Kazovsky: page 1014 col. 2, section B, 1<sup>st</sup> paragraph, as applicable in the combination).

Regarding claim 16, the combination of Fee and Kazovsky discloses a method as claimed in claim 12, wherein the further control information is added to the optical data signal by means of a phase-shift-keying modulation technique (Kazovsky: page 1014 col. 2, section B, 1<sup>st</sup> paragraph, as applicable in the combination).

Regarding claim 22, Fee discloses an optical data signal receiver for reading a light beam modulated with control information and modulated with data using an amplitude modulation technique, the receiver comprising a control information reader and a router for routing the modulated data stream in response to the control information (col. 7, lines 6-14 and col. 9, line 35 to col. 11, line 51). Fee does not disclose that the control information modulation is constant amplitude modulation. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Kazovsky with Fee as described above for claims 1-3.

Regarding claim 23, the combination of Fee and Kazovsky discloses an optical data signal receiver as claimed in claim 22, further comprising means for removing the control information from the modulated light beam (Fee: col. 9, line 35 to col. 11, line 51).

8. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fee (US Patent No. 5956165) in view of Kazovsky (Kazovsky et al.; "Starnet: a Multi-Gigabit-Per-Second Optical LAN Utilizing A Passive WDM Star", Journal of Lightwave Technology, IEEE, vol. 11, no 5/06, May 1993, pages 1009-1027) as applied to claims 1-3, 10-16, 22 and 23 above, and further in view of Franco et al. ("Franco") (US Patent Application Publication No. 2004/0190911).

Regarding claim 7, the combination of Fee and Kazovsky discloses a method as claimed in claim 1, but doesn't explicitly disclose that following the modulation of the light beam with the data stream, the optical data signal is passed to a constant amplitude modulator to which is supplied the control information to be applied to the optical data signal. Franco et al. disclose an optical modulation configuration where one modulator externally modulates a data signal onto an optical signal and another modulator externally modulates an additional signal onto the optical signal, where the serial order of the two modulators is not significant (fig. 1 and paragraphs 0086-0097). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the external modulation techniques of Franco to the two modulations of the combination, in order to provide the benefit of external modulation over direct modulation, since external modulation does not produce transmission distance limiting signal chirp that is produced when directly modulating a laser.

Regarding claim 8, the combination of Fee and Kazovsky discloses a method as claimed in claim 1, but does not disclose that the data stream is applied to the light by means of a Mach-Zehnder interferometer to which is supplied the data stream, so as to produce an amplitude-modulated optical data signal. However, it would have been



Art Unit: 2633


obvious to one of ordinary skill in the art at the time of the invention to combine Franco with the combination as described above for claim 7.

***Conclusion***

9. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (800) 786-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pairedirect.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
JASON CHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600